

Naval Tactical Command Support  
System  
NTCSS  
Optimized NALCOMIS OMA  
Information Brief



***11 April 2001***

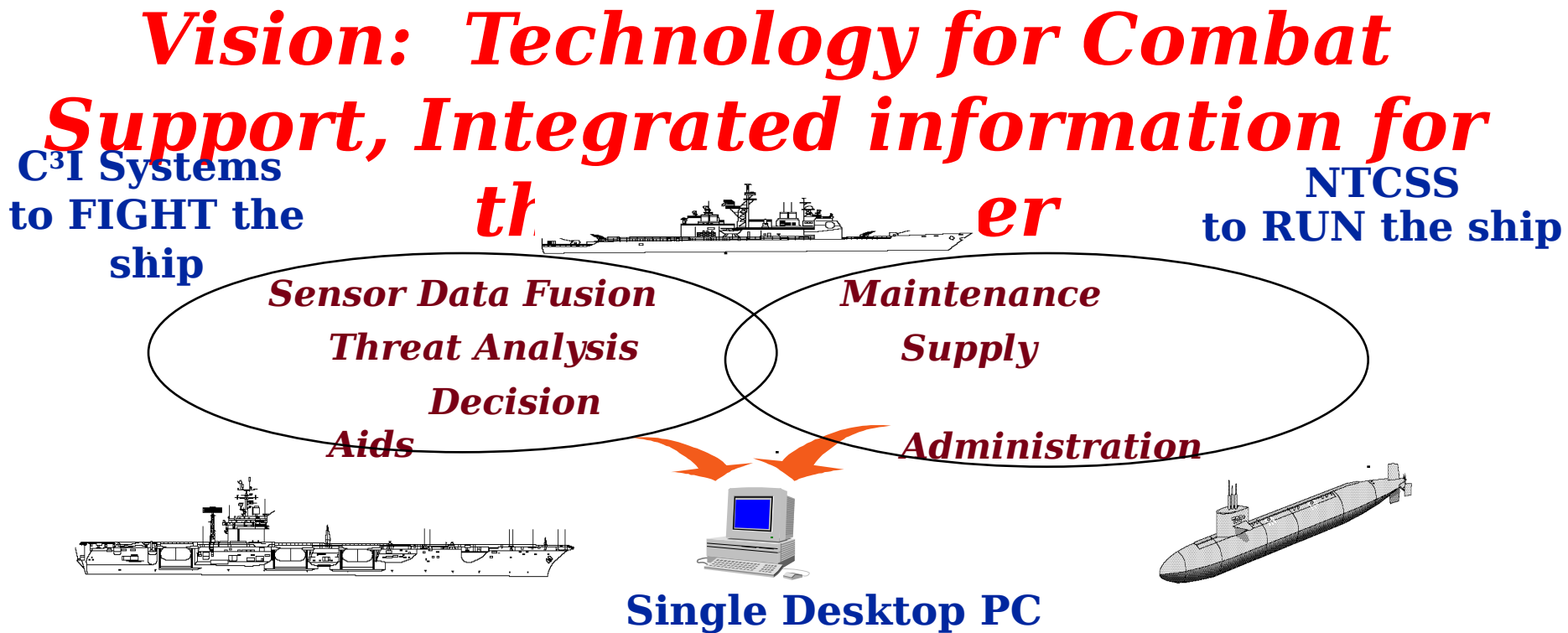
***757-8903***

***AIR***

# Overview

- NTCSS Program
- NALCOMIS History
- AMSR - CNO Endorsement
- Aviation Maintenance Today
- Optimized OMA - The Revolution
- Opt OMA Configuration Management
- Current Status

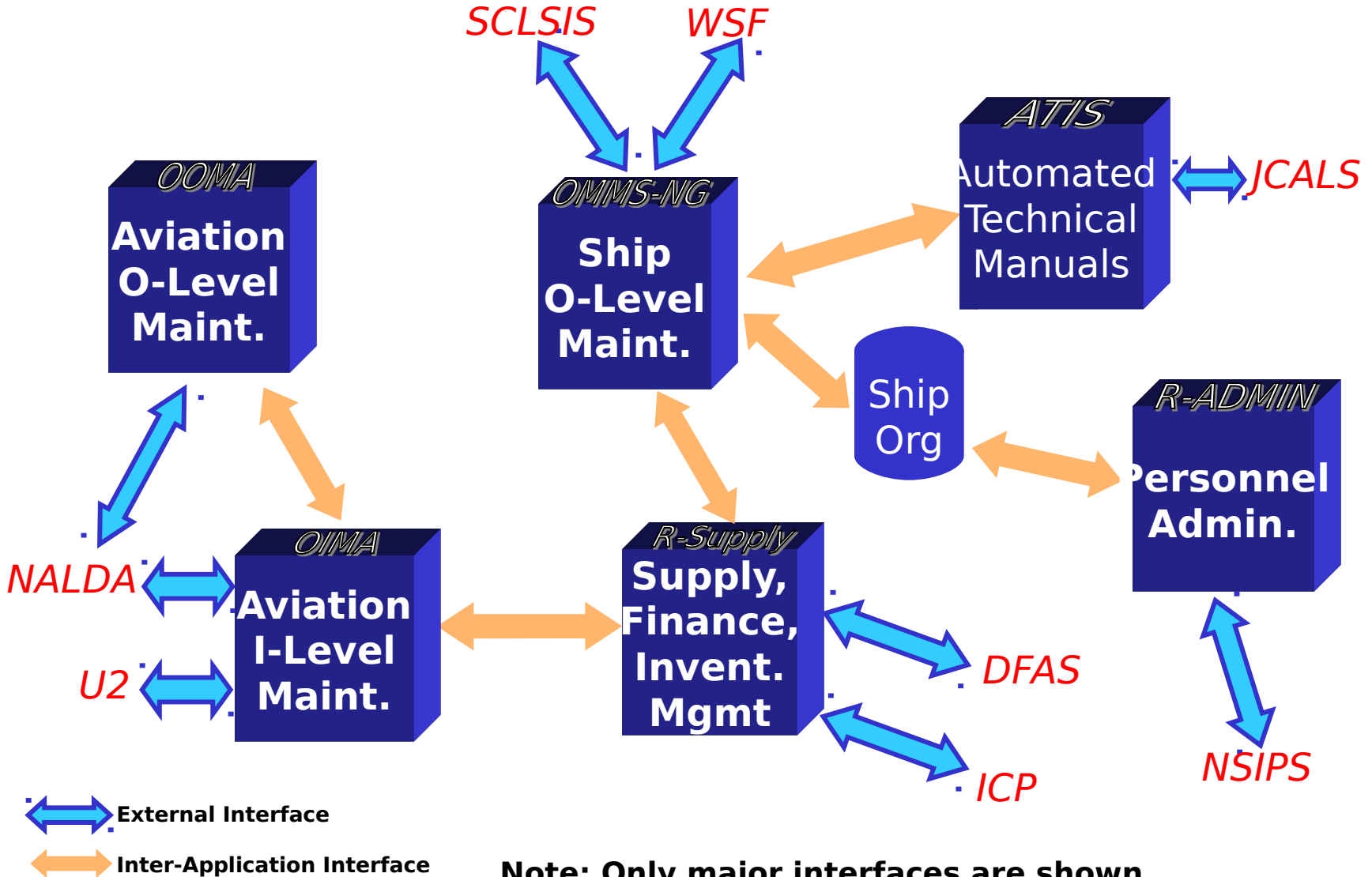
# Role of NTCSS



- Naval Tactical Command Support System ... the combat support counterpart to the Navy command and control (C<sup>2</sup>)systems (GCCS-M)
- Provides standard combat support data processing capability to all afloat and deploying shore-based fleet activities
- Standard migratory system for the Navy under the the Global Combat Support System (GCCS)

# SPAWAR PMW-151

## What is NTCSS?



# NTCSS Strategy

Since the 70's

94

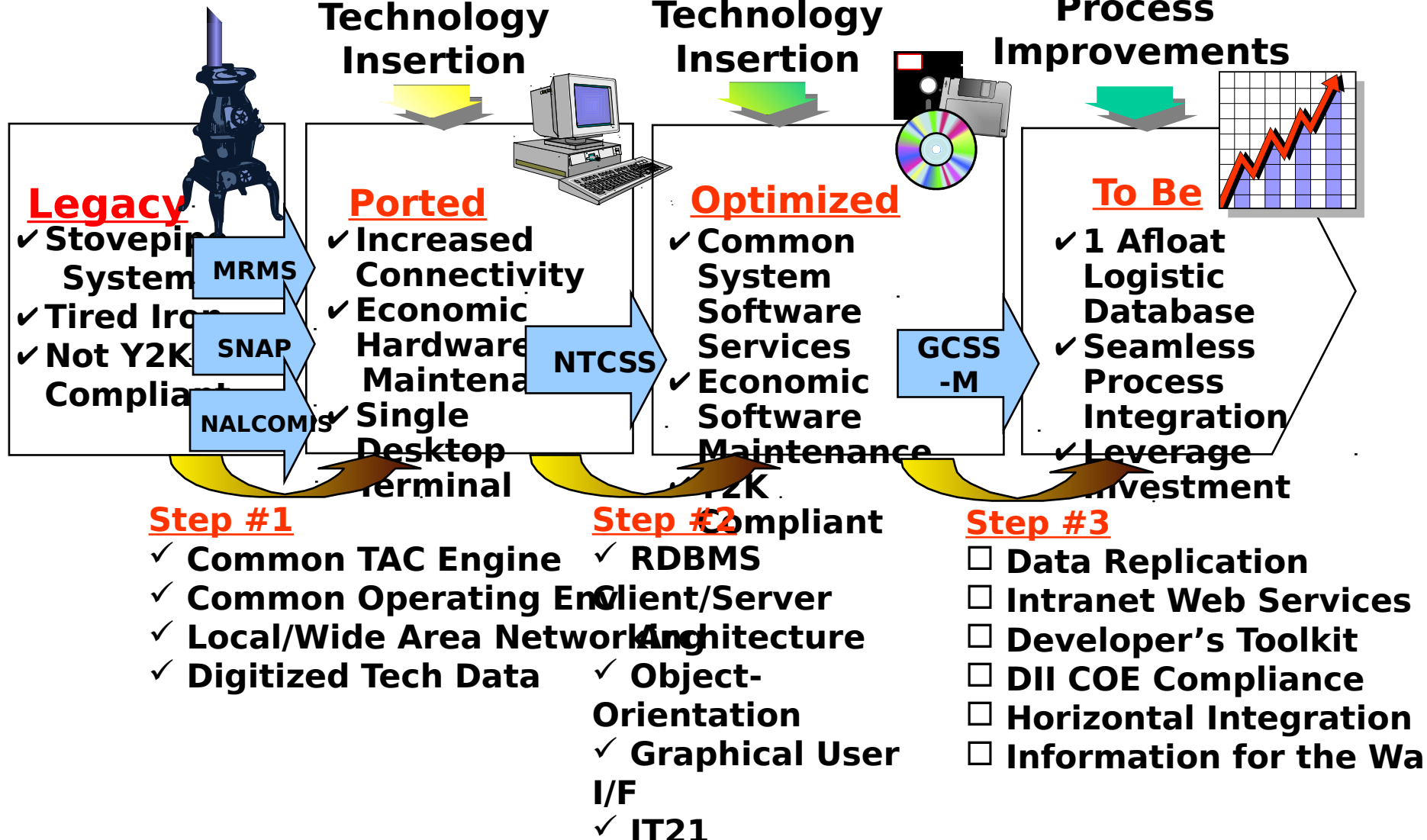
99

The future

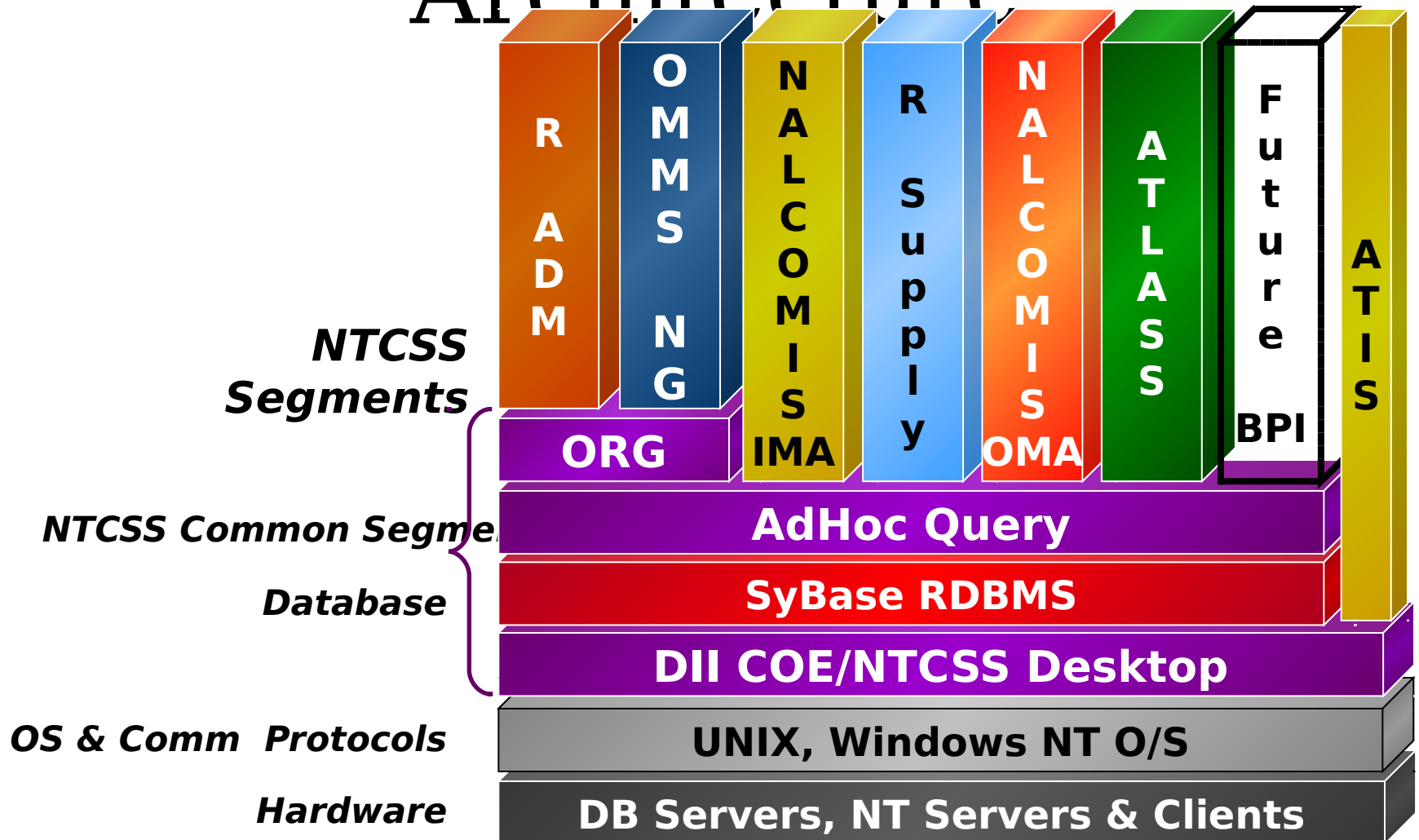
## Hardware Technology Insertion

## Software Technology Insertion

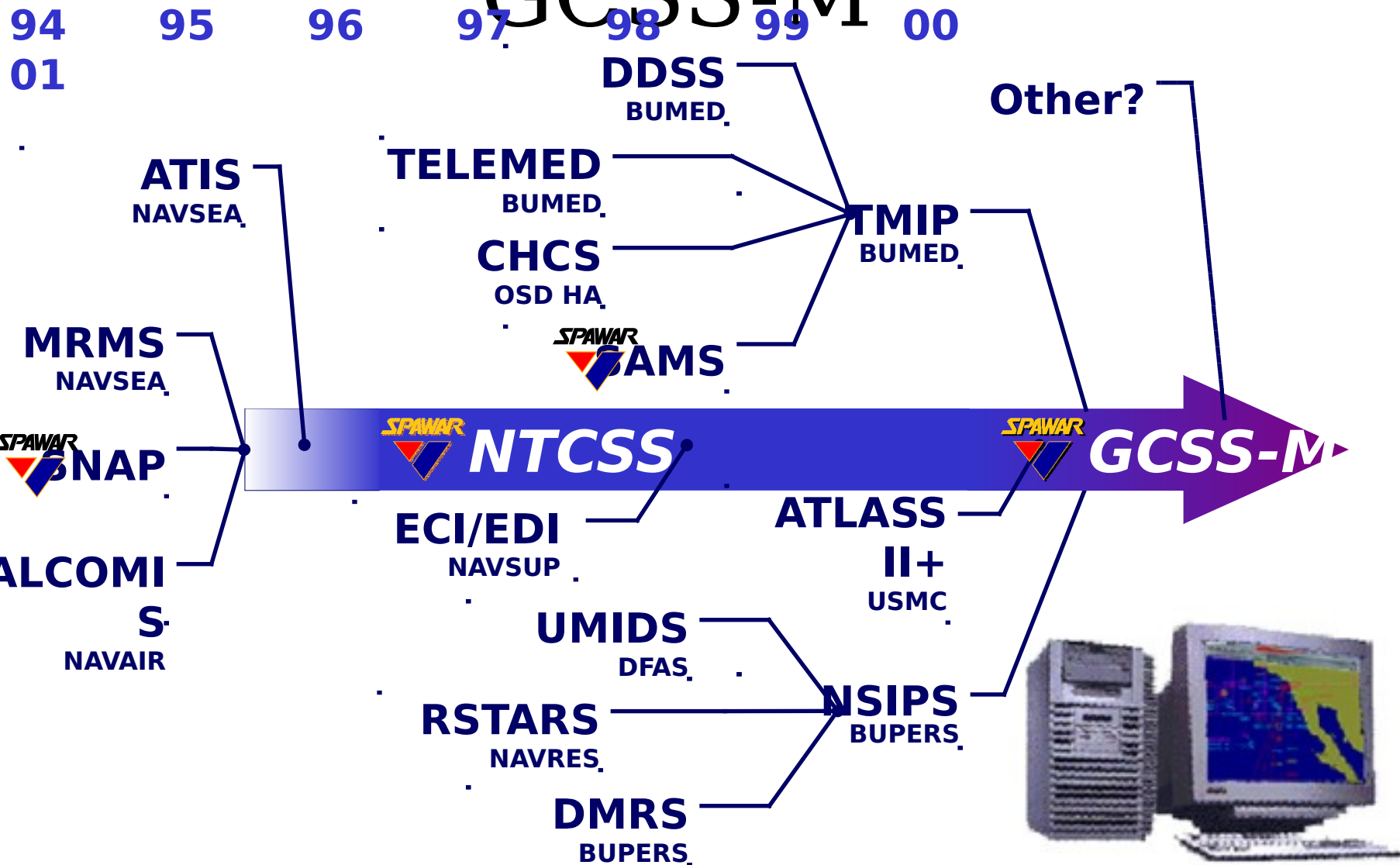
## Business Process Improvements



# 'Plug-in' Software Architecture



# NTCSS Migration to GCSS-M



# NTCSS- NALCOMIS

- Resource Sponsor - OPNAV N62
- Program Manger - SPAWAR PMW-151
- Functional Sponsor - OPNAV N781
- Functional Manager - NAVAIR 3.6



**NALCOMIS**



# NALCOMIS History

- The Mission Needs Statement for NALCOMIS dates back to the late 1970's.
- PMA-270/NAVAIR was the Program Manager
- Project went through several early iterations (SIDMS/NRMMS) before developing the first product suite--NALCOMIS Phase II (IMA) which was first deployed in the 1989-1990 timeframe
- NALCOMIS Phase III (OMA) was developed and deployed during the 1992-1997 timeframe
- The NALCOMIS program transitioned to SPAWAR in 1996.
- Naval Aviation Program of Record for Fleet Maintenance



**NALCOMIS**

# Aviation Maint./ Logistics Operating Environment

## Maintenance / Operations

**Maintenance Management**

**Fatigue Life Expended**

**Supply**

**Config Status Accounting**

**Inventory/ Custody**

**Flying Ops**

**Readiness**

**Tech Data**

**Support Equip**

**Training**

**"O" Level**



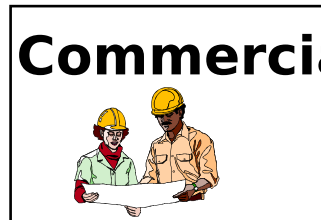
**"I" Level**



**Depots**



**Commercial**



## Program / Logistics Management

**OPNAV**

TOC

Policy

Readiness

Flying Hour

Program



**NAVICP**



WSM

Fleet Repro curemen

Asset Visibility

**OEMs**



Maintenance Plan

Source Data Devel

BD&E Sustaining

**PMA**

**FST**

**IPT**

RCM

Tech Data

Ownership Cost

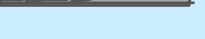
Affordable

Readiness



**TYCOM**

Readiness  
Cost  
Deployment preparation  
Configuration Mgmt



# NALDA

## IDF



# Optimized NALCOMIS

OMA

IDE

TDSA

AV3M

PLTS

AIRRS

COMTRA

AEMS

ICAPS

MAF  
A-Z  
60 series

AV3M

DSF / ISM  
AV3M

DSF / ISM

MAF  
A-Z

IMA / SSC

DDSN

Turn-In  
MAF

NALCOMIS  
DETACHMENT

MID TIER

TYCO

TYCOM

MAINT

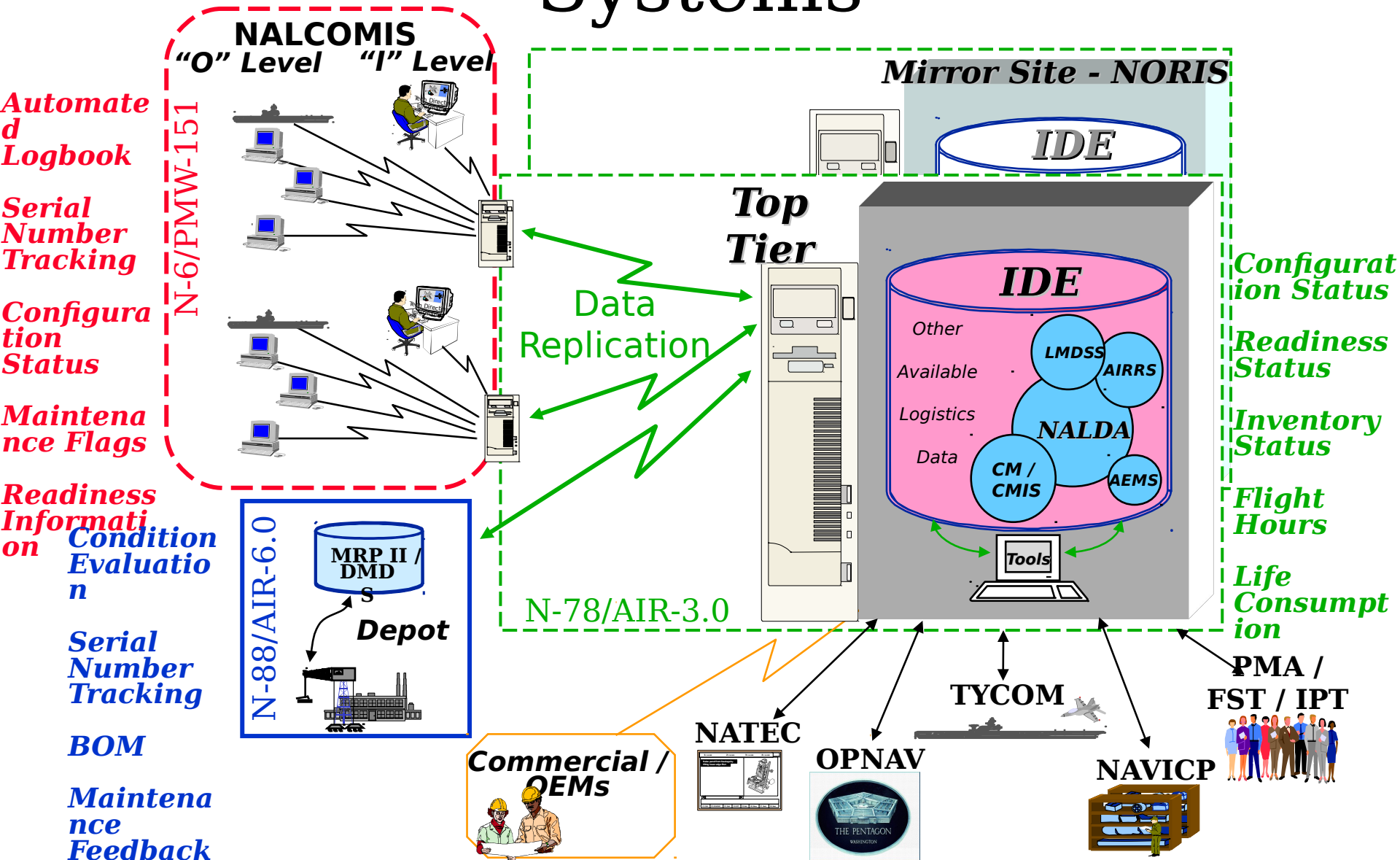
FLIGHT

OOMA

CM

SAFE

# Evolution to System of Systems



# Aviation Maintenance Supply Readiness (AMSR)

**CNO, CINC, SYSCOM, Flag**

**Initiative:** *IS&IE: Data Integrity Improvement*

- 35 PERCENT OF AVIATION 3M DATA IS LOST IN UP-LINE REPORTING.

- ***ACTION REQUIRED:***

- CNO N6/N8 RESOURCE IMPLEMENTATION OF NALCOMIS OP OMA/CMIS
- PMW-151 DEVELOP AND DEMONSTRATE NALCOMIS OPTIMIZED OMA.
- COMPLETE INTEGRATION WITH UPLINE/DEPOT SYSTEMS

- ***ACCOMPLISHED:***

- NALCOMIS OP ACCELERATED FY05 TO FY03; WILL REDUCE DATA PROCESSING 40 DAYS TO NEAR REAL-TIME; IMPROVE DATA INTEGRITY
- N6/N8/NAVAIR RESOLVED BASELINE DATA REQUIREMENTS FOR FY99/03.

- ***STATUS:***

- ISSUES 1/2/3/11/12/15/16/17 DEPENDENT ON DELIVERY OF NALCOMIS (OP).
- NAVAIR LOADED DATA INTO IDE, AND COUPLE IDE EFFORT TO OOMA AND DATA INTEGRITY.
- LMDSS APPLICATION IN FINAL IMPLEMENTATION, DETAIL HISTORICAL DATA LOADED INTO IDE. SUMMARY DATA IN PROCESS.

# CNO Endorsement

★ CNO Msg DTG 042052Z Aug 99

- “..fully supports OPNAV (N88) and NAVAIR initiatives to reduce workload associated with the Naval Aviation Maintenance Program (NAMP).”
  - These initiatives:
    - Capitalize on Technology to minimize administrative burdens
    - Enhance ability to reduce Maintenance Requirements w/out impacting readiness
      - Eliminate 14-Day Preservation requirement for aircraft and SE
      - ***Promotes accelerated development and the introduction of Optimized NALCOMIS***

# Naval Tactical Command Support System (NTCSS)



## NALCOMIS OMA

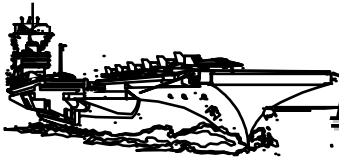
**Naval Aviation Logistics Command  
Management Information System  
Organizational Maintenance Activity**

**A tool for making day-to-day maintenance management decisions affecting aircraft readiness at the squadron level**

- Automated logbooks and configuration management (CM)
  - ↳ **Automatically tracks installed location and life usage for any component entered in the baseline, by serial number, enabling better service life management**
- Provision for the use of interactive electronic technical manuals (IETMs) and portable electronic display devices (PEDDs)
- Automated forecasting and tracking of maintenance schedules
- Support for program unique capabilities (AME)
- Data replication technology and networked architecture, providing
  - ↳ **Near real time readiness reporting**
  - ↳ **Significantly improved upline data accuracy and timeliness**
  - ↳ **Near real time access to information for spares forecasting, material management, and conditioned based maintenance**
- Tracks technical directive (TD) status for any component entered in the baseline
- Eliminates loss of component history data through use of electronic logsets



# Functional Benefits



## **Fleet**

- Serial Number Tracking
- Tracking Configurations  
Automated Log book
- Reduction of Data  
Collection
- Improved Accuracy in  
reporting
- Pre-positioning for next  
generation Aircraft
  - Autonomic Logistics



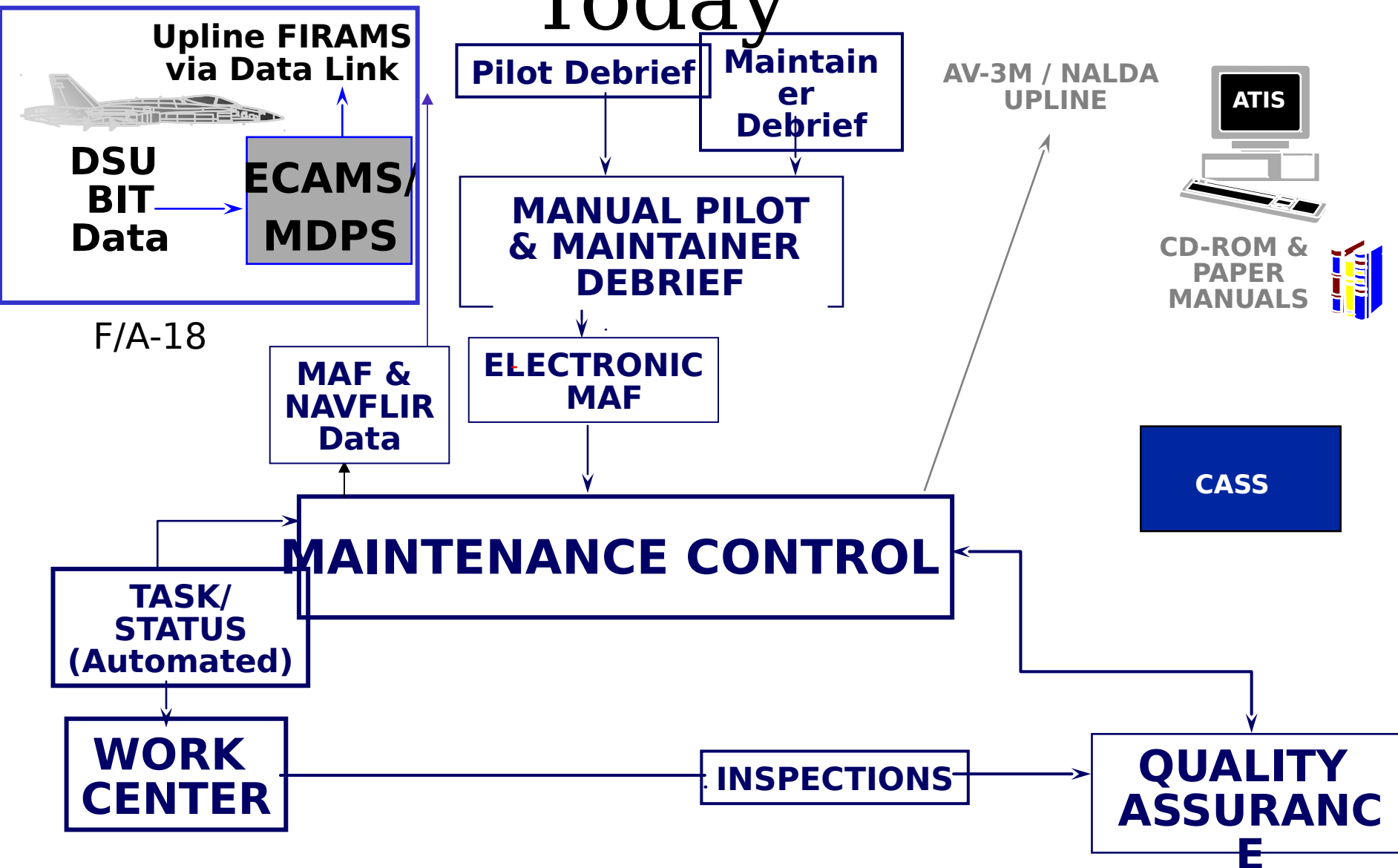
## **Upline**

- Near Real-Time view of  
Fleet Data (Worldwide)
  - Readiness
  - Flying Hours
  - Maintenance Actions
- Asset Visibility
- Feedback Data
  - Reliability Centered  
Maintenance
  - FLE Analysis
  - Total Ownership Cost  
Analysis
- Configuration Centric  
Management

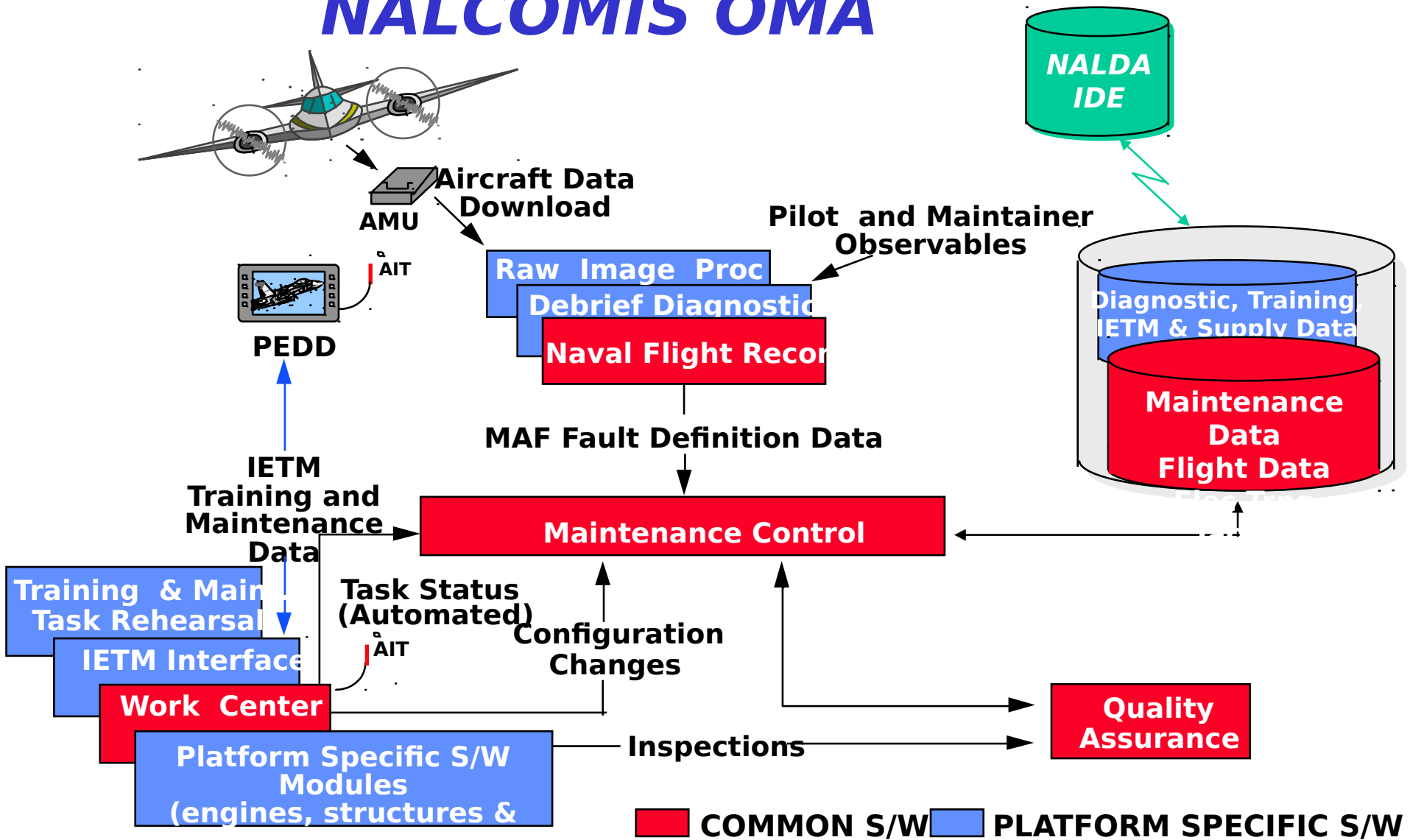
# Optimized OMA--The Revolution

- Optimized OMA is a revolutionary software solution that provides a **Configuration Management** focus to all squadron activities
  - **Forces the squadron and the life-cycle support infrastructure to rigidly maintain the “as designed” and “as is” configurations at all times**
- Built on a distributed database model using Sybase/PowerBuilder
- Supports electronic logsets and platform unique infrastructure and publications via API's
- Provides a client-server solution that is amenable to web usage via Citrix Winframe

# Squadron Maintenance Today



# OPTIMIZED NALCOMIS OMA



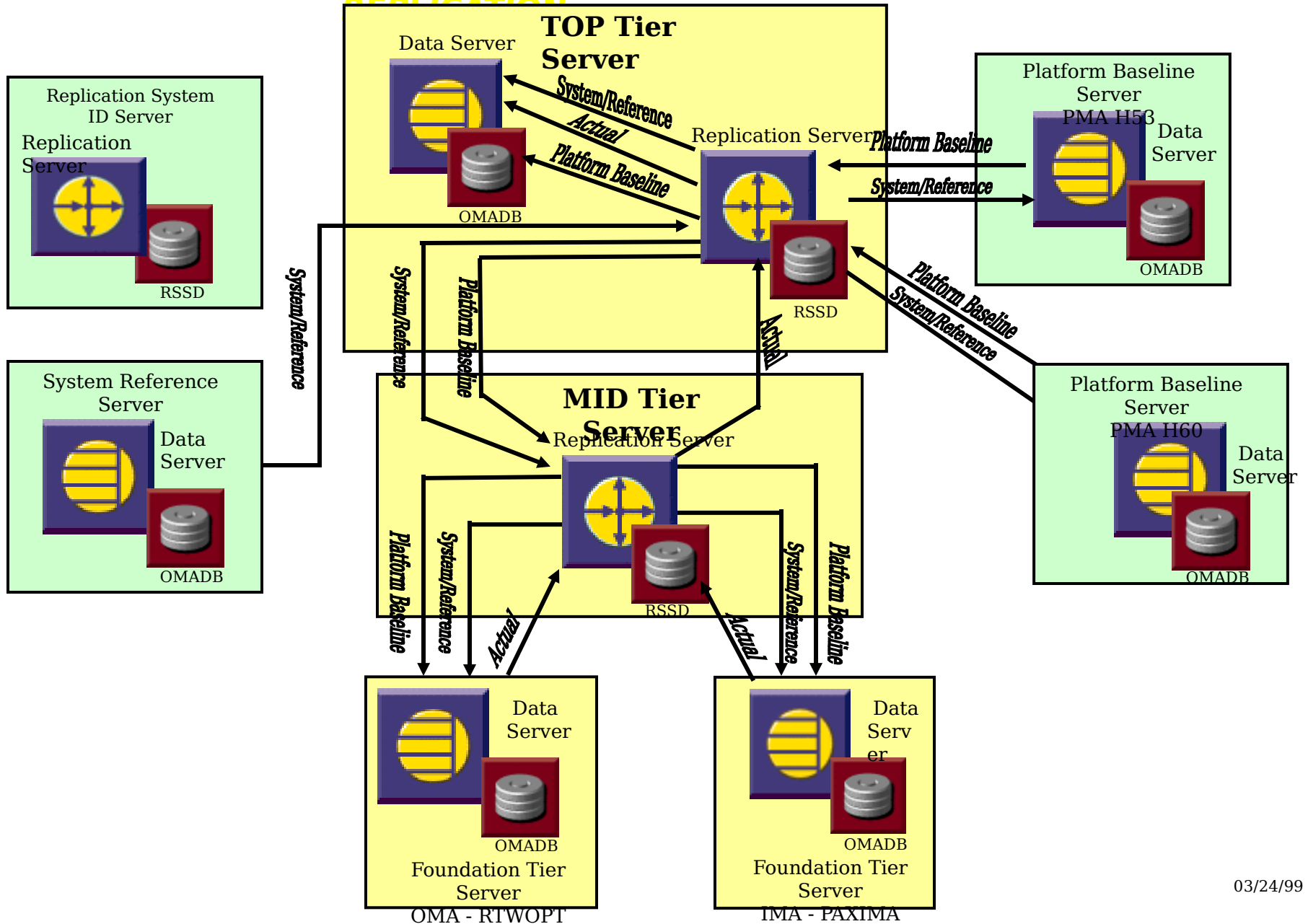
# Platform Unique Modules Developed or Being Developed

- V-22 AMEGS
- H-60 IMD
- H-53 IMD
- F-14 Engines- FLE
- C-130J
- F/A-18A-D
- F/A-18E-F

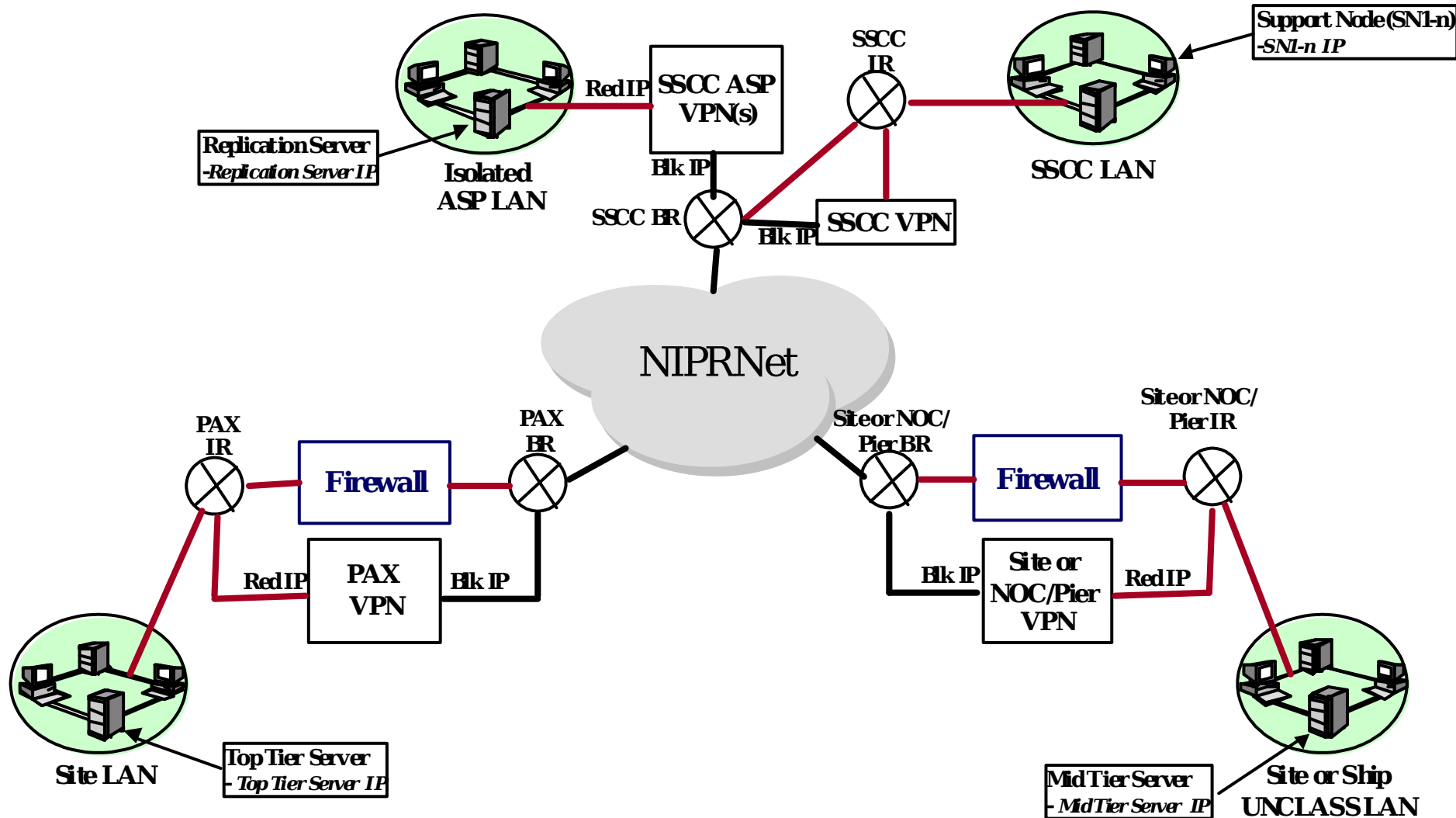
# *The Replication Solution*

- Distributed Database (400-450 user sites)
- Improved Data Accuracy/Near Real Time Data
- Data Replication Provides Capability For Improved Data
- Data Replication Software Product - Sybase Replication Server (provides transaction-based replication)
- Assumptions:
  - Network Connectivity
  - Accurate Baseline Data
    - TEC/WUC,cage/part number, etc. [NATEC is key here!]
- Database Auditing Design Features:
  - Database Identifier
  - Creation Date
  - Revision Date
  - Revision Database Identifier
  - Revision User

# PROTOTYPE OPTIMIZED OMA REPLICATION

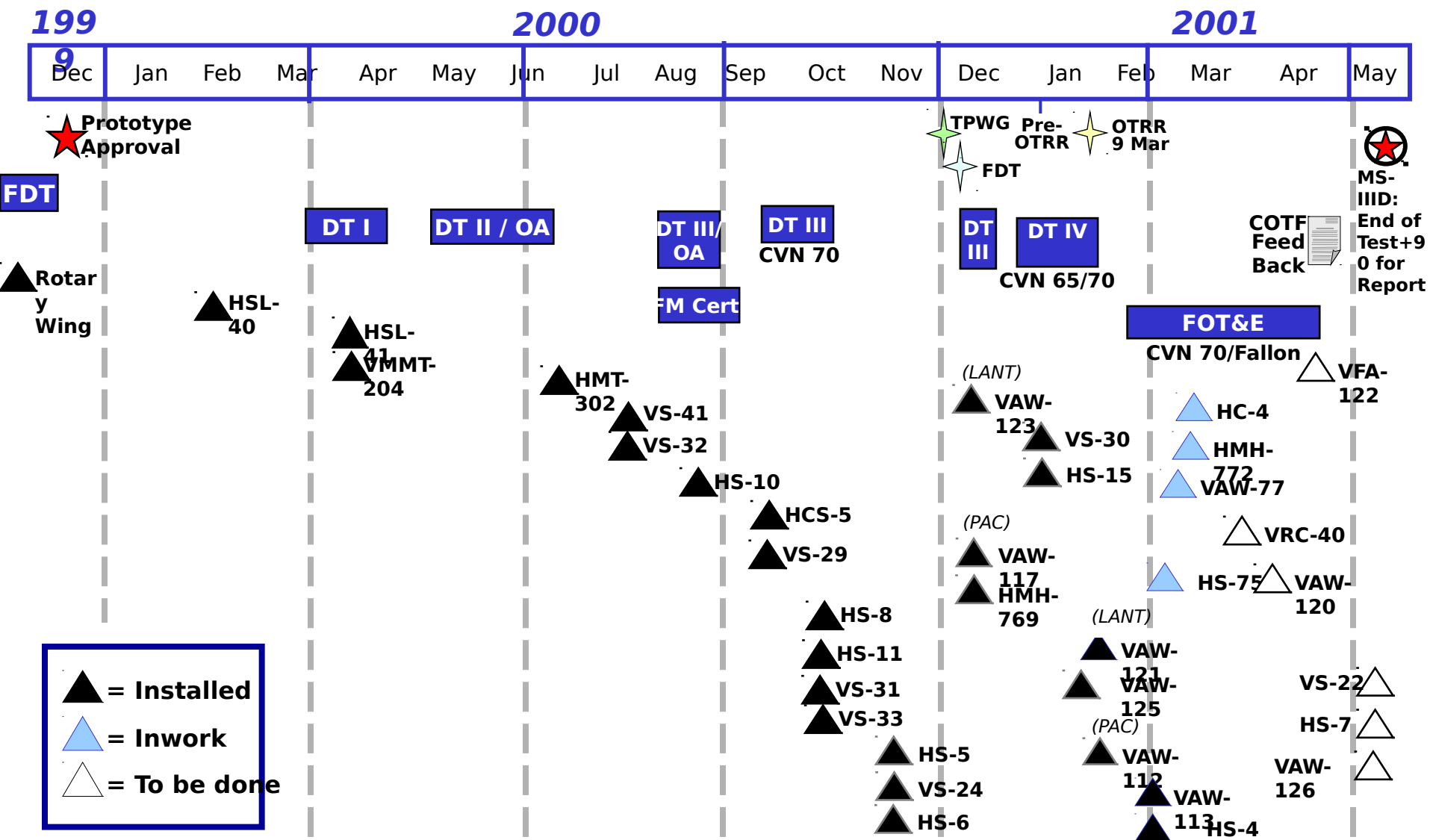


# Basic Mid Tier Replication Architecture





## Optimized OMA Implementations (Actual)



# OOMA Personnel Module

**NALCOMIS OMA**

File Table Maintenance Report Window Help

Personnel Information

020 [ MAINTENANCE CONTROL ]

- LT O AIRCEW
- AT2 I N AURBA
- CIV A M BELL
- AMH2 H C BLACKWELL
- AD1 B M BOYLE
- AE1 J C BROWN
- AT1 J B CAPLINGER
- CIV C C CHARLIE
- CIV S CROSSETT
- CIV P CROSSETT
- CIV D B DBADMIN
- CIV J DEAL
- AR D V DEAN
- CIV D D DETMAN
- CW03 K E DEWBERRY
- MSGT M A DOOLEY
- MGYSGT F W DOOLEY
- AFCM D A FASONE
- AK3 S A FERNANDO
- ADC C B FONNER
- AECS J E FORD**
- CIV I GOAGAIN
- DET I M GOING
- LT M GOODRIDGE
- ADCS W C HARRISON
- 6Z3 G I HEATH

**NALCOMIS OMA User Account**

Details SMQ/ACW Crew Time/Landing History

ORG CD: AH1 Shift: D

SSN: 015-48-2211 Duty Section: 1

Last Name: FORD Personnel Type: M

First Initial: J Assign Work Center: 020

Middle Initial: E OMA Login ID: jford

Rate/Rank: AECS IMA Password: \*\*\*\*\*

Pay Grade: E8

\*\* SAFEGUARD IAW PRIVACY ACT \*\*

Ready [99301] 28 Oct 1999 15:07:43 User STAHR






Start NALCOMIS OMA NALCOMIS OM... NALCOMIS O... NALCOMIS OM... Microsoft Power... 3:07 PM

# OOMA Visual Electronic Display

**NALCOMIS OMA**

File Table Maintenance Online Processing Mass Job Status Window Help

**Aircraft VED**

ORG	MODEX	BUHO	U/D/P	EOC	CF REQ	QA REQ	In Proc	AWA	IW	AWM	AWP	Remarks
	617	163794 AHZE	D	Z	2	12	N	0	0/0	49/6	7/3	#1 ENGINE HI TGT PREPPED FOR D
	618	149618 AHZE	D	Z	0	0	N	0	0/0	7/1	2/1	PREPPED FOR DET 9/29/99
	619	164619 AHZE	P	K	0	0	N	0	0/0	1/0	0/0	
	645	654789 AHZE	D	Z	0	0	N	0	0/0	2/0	3/3	
	678	145678 AHZE	U		0	0	N	0	3/0	0/0	0/0	

Refresh

Ready (99301) 28 Oct 1999 13:13:30 User STAHR

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# ALSS Visual Electronic Display

**NALCOMIS OMA**

File Table Maintenance Online Processing Mass Job Status Window Help

ALSS VED

ORG	SERNO	Assy Cd	Up/Down	In Proc	AWA	IW	AWM	AWP	Remarks
AH1	0008191411	YPA6	D	N	0	0/0	1/1	0/0	
	M16 Rifle - 0008191411								
	0008191511	YPA6	D	N	0	0/0	1/1	0/0	
	M16 Rifle - 0008191511								
	0009602204	YPA6	D	N	0	0/0	1/1	0/0	
	M16 Rifle - 0009602204								
01465C	YPA7	U	N	0	0/0	0/0	0/0	0/0	
	<div> <div> Initiate Update Remarks Queries Reports </div> <div> Recurring Unscheduled Inspections/Removals Fix Phase Duplicate Contingency </div> <div> Inspections Component Removals </div> </div>								

Refresh

Ready | [99301] | 28 Oct 1999 13:17:52 | User STAHR

Start | NALCOMIS OMA | Microsoft PowerPoint - ... | NALCOMIS OMA [HS-... | RealJukebox | 1:17 PM

# OOMA Inventory Explorer

**NALCOMIS OMA [HS-15]**

File Edit Tools Actions Utilities Window Help

**Inventory Explorer [AH1 (PRIMARY)]**

AH1 (PRIMARY)

- + BGU8/N HELICOPTER RESCUE EQPT BAC
- + SRU-31/P MEDICAL KIT - MK0011
- + AIRCRAFT HYDRAULIC TEST STAND - 2:
- + SV2 SURVIVAL VEST - BA0858
- + SH-60B Aircraft - 888
- + Engine Turboshaft Modular T700-GE-401
- + Engine Turboshaft Modular T700-GE-401
- + Engine Turbos
- + Engine Turbos
- + Engine Turbos
- + Engine Turbos
- + Aft Long Brkt
- + Rod Assembly
- + Damper Asse
- + Damper Asse
- + MR Fold Hinge
- + Main Rotor He
- + Main Rotor Blade Assembly - 7888 (RED)

Configuration Update Worksheet...  
Logset Explorer...  
Relocate To...  
Create Inventory...  
Create Component...  
Duplicate Inventory...  
Delete Inventory...  
Inventory Properties...  
Send Item to ButtonLaser  
XRAY Upline Reporting...  
Search Inventory...

**Inventory Explorer [AH1 (PRIMARY)]**

Search Type: Part Number  
High: Nomenclature  
Value: Part Number  
Serial Number  
WUC

Find  
New Search

Results

Description	SERIO	Part Number	WUC	Pos Cd	Ass
BGU-8/N HELICOPTER RESCUE EQXXX		261	91B4J		AHZE
BGU8/N HELICOPTER RESCUE EQ GLX-0045		261	91B4J		YPAC

Go To Cancel Help

TRK MSR Eng ModulePower Turbine T700-GE-401C - XX0

Ready [99301] 28 Oct 1999 11:26:33 User STAHR

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# Aircraft Logset

**NALCOMIS OMA [HS-15]**

File Tools Actions Utilities Window Help

**Logset Explorer [ SH-60B Aircraft - 141100[100] ]**

SH-60B Aircraft - 141100[100]

- 11000 Airframe
- 12000 Fuselage Compartments
- 13000 Landing Gear
- 14000 Flight Controls
- 15000 Helicopter Rotor Systems
- 22000 Turboshaft Engines
- 24000 Auxiliary Power Plant (Air)
- 26000 Helicopter Drives/Transmi
- 29000 Power Plant Installation
- 41000 Air Cond/Pressurization/He
- 42000 Electrical Power Supply
- 44000 Lighting System
- 45000 Hydraulic/Pneumatic Pow
- 46000 Fuel System
- 49000 Miscellaneous Utilities
- 51000 Instrumentation Systems
- 56000 Flight Reference Systems
- 57000 Integrated Guidance/FLT
- 58000 In-Flight Test Equipment S
- 61000 HF Communication Syster
- 62000 VHF Communication Syst
- 63000 UHF Communications
- 64000 Interphone Systems
- 65000 IFF Systems

**Identification** | TD | Components | Misc History | Repair/Rework | Preservation | Inspection | Flight Summary

BUNO/SERNO: 141100  
 CAGE: 78286  
 Nomen: SH-60B Aircraft  
 T/M/S: SH-60B  
 WUC: 1000000  
 Pos Cd:  
 Inv Class: ACFT  
 Inv Subclass: ACFT

Part No: SH-60B  
 Schd Expndtr: 10000 Hour  
 Usq Remng Qty: 9972.0  
 Total Current Usage (TSN): 0 Hour  
 Usage Since Ovrhl (TSO): 28 Hour  
 Deadline Date:  
 Usage Until Deadline: 9972 Hour

Next Highest Inv SERNO: 141100      Next Highest Inv: SH-60B Aircraft

**NALCOMIS Identification Report**      Generated: 02 FEB 2000 23:05      Prepared by: HS-15

Ready | [00033] | 2 Feb 2000 23:05:32 | User SHERWOOD

Start | Microsoft Outlook | NALCOMIS OMA | NALCOMIS OMA [HS-... | Microsoft PowerPoint - [Pr... | 11:05 PM

# Engine Logset

**NALCOMIS OMA [HS-15]**

File Tools Actions Utilities Window Help

**Logset Explorer [ 22100 [LH] T700-GE-401(C) ]**

Repair/Rework Preservation Inspection EOR ETR

Identification TD Inst/Rem Components Misc History

HH-60H Aircraft - 149618[618]

- 11000 Airframe
- 12000 Fuselage Compartments
- 13000 Landing Gear
- 14000 Flight Controls
- 15000 Helicopter Rotor System
- 22000 Turboshaft Engines
  - 22100 [LH] T700-GE-401(C)
    - 22110 Cold Section
    - 22120 Hot Section
    - 22130 Power Turbine
    - 22140 Accessory System
      - 2214100 Accessory Drive
    - 22160 Fuel System
      - 22161 Fuel Boost Pump
      - 22163 Hydromechanical Fuel Control
      - 22164 Overspeed Protection
    - 22170 Electrical System

**BUHIO/SERHIO:** 0366505 **Part No:**

**CAGE:** 99207 **Schd Expndtr:**

**Item:** Engine Turboshaft Modular T700-GE-401C

**T/M/S:** HH-60H **Usg Remng Qty:**

**WUC:** 22100 **Total Current Usag**

**Pos Cd:** LH **Usage Since Ovrhl**

**Inv Class:** ASSY **Deadline Date:**

**Inv Subclass:** ENG **Usage Until Deadlin**

**Next Highest Inv SERHIO:** 149618 **Next Highest Inv:** HH-60H Aircraft

**NALCOMIS Identification Report** Generated: 28 OCT 1999 15:03 Prepared b

Ready [99301] 28 Oct 1999 15:03:21 User STAHR

Start NALCOMIS OMA NALCOMIS OM... NALCOMIS OMA NALCOMIS O... Microsoft Power... 3:03 PM

# Logset

